

ABSTRACT

A field-effect semiconductor device having a semiconductor layer of a first conductivity type, a collector region of a second conductivity type that is formed beneath the semiconductor layer and equipped with a collector electrode on its lower surface, a base region of the second conductivity type that is formed as part of the upper surface of the semiconductor layer, at least one pair of emitter regions of the first conductivity type that are formed as part of the upper surface of the base region, an insulating layer that is formed to contact the base region that is located between the emitter regions and the semiconductor layer, a gate electrode that is placed on the upper surface of the insulating layer, an interlayer insulating film that is formed to cover the gate electrode, a barrier metal layer that is formed to continuously contact the interlayer insulating film, base region, and emitter region, and an emitter electrode that is formed on the upper surface of the barrier metal layer. The barrier metal layer that is formed between the emitter electrode and the interlayer insulating film comprises a layer containing nitrogen.